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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,563	11/20/2003	Dae-Seob Kweon	102-1011	7056

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EXAMINER

LEE, SUSAN SHUK YIN

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/716,563

Applicant(s)

KWEON

Examiner

Susan S. Lee

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4, 7-14 and 22-28 is/are rejected.  
7) ☒ Claim(s) 5, 6, 15-21 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7-14, and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al. (2002/0191990) in view of Sakai et al. (6,353,720).

Hirano et al. discloses a photosensitive member 1 and a developing apparatus 6. Note page 13, paragraph [0182]. The developing apparatus 6 has tank 25 holding toner 24; developing roller 20; and a toner supply member 22 that is a fur brush. Note page 4 – page 5, paragraph [0075] and Fig. 1.

Hirano et al. differs from the instant invention by not disclosing a cleaning unit to remove toner from the toner supplying roller that remains after the toner is transferred from the toner supplying roller to the developing roller.

Sakai et al. discloses a developing unit 4, a toner receptacle 40, a developing roller 41, a toner supplying roller 42, and a cleaning roller 45 that removes the toner from the toner supplying roller 42 (note Fig. 12B). Note column 15, lines 5-50; column 23, lines 23-67; and Fig. 13. Since the cleaning roller 45 contacts the supplying roller 42, the movement between the two rollers caused by friction must somehow shake a portion of the toner supplying roller 42. Sakai et al. discloses in Fig. 4 that the toner supplying roller 42 supplies toner to the developing roller 41 while scraping the toner

after development. When the developing roller 41 stops as the development is completed, toner supplying roller 42 is also stopped. Therefore, the toner held at that nip between the rollers may stick to the developing roller 41 surface of the toner supplying roller 42 surface. This will cause strips or white voids during development. Note column 3, lines 9-25. Thus, using a cleaning roller 45 that removes the toner from the toner supplying roller would prevent this from occurring. The developing roller 41 contacts the photoreceptor 1 (Note column 1, lines 58-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hirano et al. with that of Sakai et al. by using a cleaning roller to clean off the fur brush roller of Hirano et al. to prevent strips or white voids during development.

Claims 1-4, 7-14, and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (6,381,434) in view of Sakai et al. (6,353,720).

Yamamoto discloses a photosensitive member 10 and a developing apparatus 3. The developing apparatus 3 has a receptacle holding developer and toner; developing roller 1; and a toner supply member 4 that is a fur brush. The toner supply brush 4 is made of a fur brush flocking a core of SUS or the like with conductive fibers made of polyamide (nylon). The size of the fibers are of 1 – 10 denier/filament and the length is from 1- 10 mm. Note column 4, line 46 – column 5, line 8 and Fig. 1.

Yamamoto differs from the instant invention by not disclosing a cleaning unit to remove toner from the toner supplying roller that remains after the toner is transferred from the toner supplying roller to the developing roller.

Sakai et al. discloses a developing unit 4, a toner receptacle 40, a developing roller 41, a toner supplying roller 42, and a cleaning roller 45 that removes the toner from the toner supplying roller 42 (note Fig. 12B). Note column 15, lines 5-50; column 23, lines 23-67; and Fig. 13. Since the cleaning roller 45 contacts the supplying roller 42, the movement between the two rollers caused by friction must somehow shake a portion of the toner supplying roller 42. Sakai et al. discloses in Fig. 4 that the toner supplying roller 42 supplies toner to the developing roller 41 while scraping the toner after development. When the developing roller 41 stops as the development is completed, toner supplying roller 42 is also stopped. Therefore, the toner held at that nip between the rollers may stick to the developing roller 41 surface of the toner supplying roller 42 surface. This will cause strips or white voids during development. Note column 3, lines 9-25. Thus, using a cleaning roller 45 that removes the toner from the toner supplying roller would prevent this from occurring. The developing roller 41 contacts the photoreceptor 1 (Note column 1, lines 58-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Yamamoto with that of Sakai et al. by using a cleaning roller to clean off the fur brush roller of Hirano et al. to prevent strips or white voids during development.

***Allowable Subject Matter***


Claims 5, 6, and 15-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's arguments with respect to claims 1, 7-10, 12, 13, and 22-25 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119 or 571-272-2800 (Ext. 52). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Susan S. Lee  
Primary Examiner  
Art Unit 2852